

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A method for the formation of a [[good]] contact surface having good electrical conductivity on a support bar of an aluminum cathode used in electrolysis~~[[,]]~~ comprising:

_____ i) _____ attaching a copper contact piece onto the end of the support bar;

_____ ii) _____ immersing the cathode plate in an electrolysis cell and supporting the support bar by its ends on the sides of the electrolysis cell so that the contact piece is located on top of a busbar, the lower surface of the contact piece touching the electrolysis cell busbar forming the contact surface;

_____ iii) _____ forming a transmission layer on the an area of the ~~lower surface of the support bar~~ ~~contact piece~~, the contact surface~~[[,]]~~; and

_____ iv) _____ ~~touching the electrolysis cell busbar and the contact surface~~; coating the contact surface with a silver or silver alloy having a thickness of 0.5 - 2 mm by using a soldering or thermal spraying technique,

wherein the transmission layer and the coating form a metallurgical joint with the copper contact piece.

2. (previously presented) The method according to claim 1, wherein the transmission layer is tin or a tin-dominant layer.

3. - 4. (cancelled)

5. (currently amended) The method according to claim [[4]] 1 wherein the thermal spraying technique is based on gas combustion.

6. (currently amended) The method according to claim [[4]] 1, wherein the thermal spraying technique is high velocity oxy-fuel spraying.

7. (previously presented) The method according to claim 1, wherein silver or silver alloy is in powder form.

8. (currently amended) The method according to claim [[4]] 1, wherein the thermal spraying technique is flame spraying.

9. (previously presented) The method according to claim 1, wherein silver or silver alloy is in wire form.

10. (previously presented) The method according to claim 1, wherein the contact surface is subjected to heat treatment after coating.

11. (currently amended) A method for repairing a contact surface of an aluminum cathode support bar used in electrolysis, comprising:

- _____ i) _____ attaching a copper contact piece to one end of the support bar[[,]]; _____
- _____ ii) _____ immersing a cathode plate into an electrolysis cell[[,]]; _____
- _____ iii) _____ supporting the contact piece of the support bar [[by]] on the electrolysis cell busbar[[,]]; _____
- _____ iv) _____ straightening out linearly the contact surface of the support bar contact piece, or lower surface, and; _____
- _____ v) _____ forming a transmission layer of tin on the lower surface[[,]]; _____
- _____ vi) _____ coating the contact surface by using a soldering or thermal spraying technique with silver or silver alloy having a thickness of 0.5 – 2 mm[[,]]; and _____
- _____ viii) _____ forming a metallurgical joint with the copper, tin and silver or silver alloy coating. _____

12. (currently amended) A method for repairing a contact surface of an aluminum cathode support bar used in electrolysis, comprising:

- _____ i) _____ attaching a copper contact piece to one end of the support bar[[,]]; _____
- _____ ii) _____ furnishing the lower edge of the contact piece with a notch[[,]]; _____
- _____ iii) _____ immersing a cathode plate into an electrolysis cell[[,]]; _____
- _____ iv) _____ supporting the support bar [[by]] on the electrolysis cell busbar at the notch, wherein the inclined sides of the notch act as the contact surface of the support bar contact piece[[,]]; _____
- _____ v) _____ straightening out linearly the inclined sides of the notch[[,]]; _____
- _____ vi) _____ forming a transmission layer of tin on the sides; _____
- _____ vii) _____ coating the contact surface by using a soldering or thermal spraying technique _____

with silver or silver alloy having a thickness of 0.5 – 2 mm[[],]; and

_____viii)_____forming a metallurgical joint with the copper, tin and silver or silver alloy coating.

13. (previously presented) A support bar for an aluminum cathode used in electrolysis, where a cathode plate of the cathode is meant to be immersed in an electrolysis cell and the cathode support bar to be supported at its ends on the edge of the electrolysis cell, so that a contact piece of copper is attached to one end of the support bar, wherein the area of the lower surface of the support bar contact piece, the contact surface touching the busbar, comprising a silver or silver alloy coating having a thickness of 0.5 – 2 mm and before coating, the contact surface comprises a transmission layer, wherein the silver or silver alloy coating forms a metallurgical joint with the transmission layer and the copper of the contact piece.

14. (previously presented) The support bar according to claim 13, wherein the transmission layer is tin or a tin-dominant alloy.

15. (previously presented) The support bar according to claim 13 wherein the silver or silver alloy layer is formed using soldering technique.

16. (previously presented) The support bar according to claim 13 wherein the silver or silver alloy layer is formed using thermal spraying technique.